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L1: Entry 1 of 1

File: USPT

Jul 8, 2003

US-PAT-NO: 6591250

DOCUMENT-IDENTIFIER: US 6591250 B1

TITLE: System and method for managing virtual property

DATE-ISSUED: July 8, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Johnson; Michael T.	Derry	NH		
Moromisato; George P.	Cambridge	MA		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Genetic Anomalies, Inc.	Cambridge	MA			02

APPL-NO: 09/ 253167 [\[PALM\]](#)

DATE FILED: February 15, 1999

## PARENT-CASE:

RELATED APPLICATION This application claims the benefit under Title 35, U.S.C. .sctn.119(e) of co-pending U.S. Provisional Application Ser. No. 60/075,518, filed Feb. 23, 1998, entitled "SYSTEM AND METHOD FOR MANAGING VIRTUAL PROPERTY" by Michael T. Johnson and George P. Moromisato, the contents of which are incorporated herein by reference.

INT-CL: [07] G06 F 12/14, G06 F 17/60

US-CL-ISSUED: 705/51; 705/3, 380/30, 713/176

US-CL-CURRENT: 705/51; 380/30, 705/3, 713/176

FIELD-OF-SEARCH: 713/200, 705/37

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

Search Selected

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PAT-NO

ISSUE-DATE

PATENTEE-NAME

US-CL

☐ 4378118

March 1983

Leonardi, Jr.

273/292

☐ 4552360

November 1985

Bromley et al.

463/38

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<input type="checkbox"/> <u>4569526</u>	February 1986	Hamilton	273/242
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<input type="checkbox"/> <u>5125671</u>	June 1992	Ueda et al.	463/33
<input type="checkbox"/> <u>5184830</u>	February 1993	Okada et al.	463/29
<input type="checkbox"/> <u>5356151</u>	October 1994	Abecassis et al.	273/243
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<input type="checkbox"/> <u>5409234</u>	April 1995	Bechter	273/241
<input type="checkbox"/> <u>5498003</u>	March 1996	Gechter	461/31
<input type="checkbox"/> <u>5664998</u>	September 1997	Seelig et al.	463/20
<input type="checkbox"/> <u>5672131</u>	September 1997	Osborne et al.	473/527
<input type="checkbox"/> <u>5704837</u>	January 1998	Iwasaki et al.	463/38
<input type="checkbox"/> <u>5774125</u>	June 1998	Suzuoki et al.	345/582
<input type="checkbox"/> <u>5809144</u>	September 1998	Sirbu et al.	380/25
<input type="checkbox"/> <u>5850442</u>	December 1998	Muftic	380/21
<input type="checkbox"/> <u>5872973</u>	February 1999	Mitchell et al.	709/332
<input type="checkbox"/> <u>6009458</u>	December 1999	Hawkins et al.	709/203
<input type="checkbox"/> <u>6119229</u>	September 2000	Martinez et al.	713/200
<input type="checkbox"/> <u>6226412</u>	May 2001	Schwab	382/232
<input type="checkbox"/> <u>PCT/US98/11680</u>	July 1998		

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 588 625	March 1994	EP	
2 092 796	August 1982	GB	
0650124	October 1993	GB	

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Applied Cryptology, Cryptographic Protocols, and Computer Security Models, vol. 29, Proceedings of Symposia in Applied Mathematics American Mathematical Society.\*

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Business Wire, Baltimore technologies Announces X/Secure; The first Commercial Product to Secure XML Systems for e-business, Aug. 9, 1999, 1028 words.\*

K. O'Connell, V. Cahill, A. Condon, S. McGerty, G. Starovic, B. Tangney: "The Void Shell, A Toolkit for The Development of Distributed Video Games and Virtual Worlds" Proceedings of First Workshop on Simulation and Interaction in Virtual Environments, Jul. 13-15, 1995, pp. 172-177, XP002089776.

A. Bowling: "OMT and the Game of War" Journal of Computing in Small Colleges, vol. 10, Jan. 1995, pp. 73-83, XP002089777.

S. Roti, "How Indexes and Other Tricks Can Help--or Hinder--Your Performance Tuning

Efforts," Indexing and Access Mechanisms, DBMS, May 1996, pp. 1-6.

ART-UNIT: 3621

PRIMARY-EXAMINER: Trammell; James P.

ASSISTANT-EXAMINER: Greene; Daniel L.

ATTY-AGENT-FIRM: Wolf, Greenfield & Sacks, P.C.

ABSTRACT:

A system and method for managing virtual property is disclosed. In the system, virtual items are each represented by one or more digital objects and are managed by one or more computer systems functioning as an owner, broker, authenticator and provider.

43 Claims, 14 Drawing figures

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L4: Entry 1 of 12

File: USPT

Jul 8, 2003

DOCUMENT-IDENTIFIER: US 6591250 B1

TITLE: System and method for managing virtual property

Application Filing Date (1):19990215Brief Summary Text (5):

Virtual property in a software construct may be a digital object or other software token that represents actual property or serves as a substitute for actual property in certain transactions. Actual property may include stocks, bonds, or any other real, tangible, or intangible property. Both virtual property and paper instruments such as a check represent actual property. Unfortunately, these cryptographic systems are also subject to attacks that may compromise the security of their transactions.

Detailed Description Text (35):

Centralized tracking should be available to detect forgery of virtual property items. Centralized tracking also provides security of a user's virtual property items because the centralized system used to validate an owner's virtual property items is itself a secure system. According to various embodiments of the invention, new systems and methods are disclosed for tracking large numbers of virtual property items using a very small database by representing the virtual property items with a cryptographic hash value or digest. Also, items must be tracked to guarantee their authenticity such that forgery of virtual property items is detected. Forgery should be detected in such a system to avoid forgery of items that may be used as the basis of a virtual property transaction. A cryptographic hash value may be computed for one or more virtual property items and compared to a hash value calculated independently to verify that virtual property items are authentic.

Current US Original Classification (1):705/51

CLAIMS:

13. The system according to claim 10, wherein the software object represents a game token.

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L2: Entry 1 of 1

File: USPT

Feb 3, 1998

DOCUMENT-IDENTIFIER: US 5715403 A

TITLE: System for controlling the distribution and use of digital works having attached usage rights where the usage rights are defined by a usage rights grammar

Detailed Description Text (150):

If Remaining-Rights is not specified, then there are no rights for the original after all Loan copies are loaned out. If Remaining-Rights is specified, then the ~~Keep: token~~ can be used to simplify the expression of what ~~rights to keep~~ ~~to keep~~. A list of right codes following keep means that all of the versions of those listed rights are kept in the remaining copy. This specification can be overridden by subsequent Delete: or Replace: specifications.

Detailed Description Text (412):

The requester decrypts the software using the key from the certificate and computes a check code on it using a 1-way hash function. If the check-code does not match the tamper-checking code from the certificate, the installation transaction ends with an error. (This step assures that the contents of the software, including the various scripts, have not been tampered with.)

Detailed Description Text (423):

The requester decrypts the software using the key from the certificate and computes a check code on it using a 1-way hash function. If the check-code does not match the tamper-checking code from the certificate, the installation transaction ends with an error. (This step assures that the contents of the software, including the various scripts, have not been tampered with.)

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L1: Entry 1 of 1

File: USPT

Feb 3, 1998

US-PAT-NO: 5715403

DOCUMENT-IDENTIFIER: US 5715403 A

TITLE: System for controlling the distribution and use of digital works having attached usage rights where the usage rights are defined by a usage rights grammar

DATE-ISSUED: February 3, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Stefik; Mark J.	Woodside	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Xerox Corporation	Stamford	CT			02

APPL-NO: 08/ 344041 [\[PALM\]](#)

DATE FILED: November 23, 1994

INT-CL: [06] [G06 F 1/14](#), [G06 F 13/372](#)

US-CL-ISSUED: 395/244; 395/188.01, 395/800, 380/23

US-CL-CURRENT: [705/44](#); [705/54](#), [705/57](#), [709/229](#), [713/202](#)

FIELD-OF-SEARCH: 395/800, 395/600, 395/700, 395/775, 395/650, 395/182.13, 395/608, 395/183.14, 395/201, 395/569, 395/825, 395/712, 395/187.01, 395/188.01, 395/244, 395/217, 380/4, 380/15, 380/18, 380/20, 380/25, 380/24, 380/23, 380/30, 364/DIG.1, 364/DIG.2, 364/41R, 340/825.33, 340/825.34, 348/3, 455/4.1, 455/5.1, 455/26.1

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<a href="#">3790700</a>	February 1974	Callais et al.	348/3
<input type="checkbox"/>	<a href="#">4529870</a>	July 1985	Chaum	235/380
<input type="checkbox"/>	<a href="#">4658093</a>	April 1987	Hellman	380/25
<input type="checkbox"/>	<a href="#">4891838</a>	January 1990	Faber	380/25
<input type="checkbox"/>	<a href="#">4924378</a>	May 1990	Hershey et al.	364/200

<input type="checkbox"/>	<u>4932054</u>	June 1990	Chou et al.	380/4
<input type="checkbox"/>	<u>4937863</u>	June 1990	Robert et al.	380/4
<input type="checkbox"/>	<u>4953209</u>	August 1990	Ryder, Sr. et al.	380/23
<input type="checkbox"/>	<u>4961142</u>	October 1990	Elliott et al.	364/408
<input type="checkbox"/>	<u>4977594</u>	December 1990	Shear	380/4
<input type="checkbox"/>	<u>5010571</u>	April 1991	Katznelson	380/4
<input type="checkbox"/>	<u>5014234</u>	May 1991	Edwards, Jr.	364/900
<input type="checkbox"/>	<u>5023907</u>	June 1991	Johnson et al.	380/4
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<input type="checkbox"/>	<u>5050213</u>	September 1991	Shear	380/25
<input type="checkbox"/>	<u>5058164</u>	October 1991	Elmer et al.	380/50
<input type="checkbox"/>	<u>5103476</u>	April 1992	Waite et al.	380/4
<input type="checkbox"/>	<u>5113519</u>	May 1992	Johnson et al.	395/600
<input type="checkbox"/>	<u>5138712</u>	August 1992	Corbin	395/700
<input type="checkbox"/>	<u>5146499</u>	September 1992	Geffrotin	380/23
<input type="checkbox"/>	<u>5159182</u>	October 1992	Eisele	235/492
<input type="checkbox"/>	<u>5191193</u>	March 1993	Le Roux	235/379
<input type="checkbox"/>	<u>5204897</u>	April 1993	Wyman	380/4
<input type="checkbox"/>	<u>5247575</u>	September 1993	Sprague et al.	380/9
<input type="checkbox"/>	<u>5255106</u>	October 1993	Castro	380/18
<input type="checkbox"/>	<u>5260999</u>	November 1993	Wyman	380/4
<input type="checkbox"/>	<u>5291596</u>	March 1994	Mita	395/608
<input type="checkbox"/>	<u>5339091</u>	August 1994	Yamazaki et al.	345/104

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2236604	April 1991	GB	
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ART-UNIT: 232

PRIMARY-EXAMINER: Pan; Daniel H.

ATTY-AGENT-FIRM: Domingo; Richard B.

#### ABSTRACT:

A system for controlling use and distribution of digital works. The present invention allows the owner of a digital work to attach usage rights to their work. The usage rights define how the individual digital work may be used and distributed. Instances of usage rights are defined using a flexible and extensible usage rights grammar. Conceptually, a right in the usage rights grammar is a label associated with a predetermined behavior and conditions to exercising the right.



The behavior of a usage right is embodied in a predetermined set of usage transactions steps. The usage transaction steps further check all conditions which must be satisfied before the right may be exercised. These usage transaction steps define a protocol for requesting the exercise of a right and the carrying out of a right.

28 Claims, 20 Drawing figures

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